

Mercury Emissions from Industry

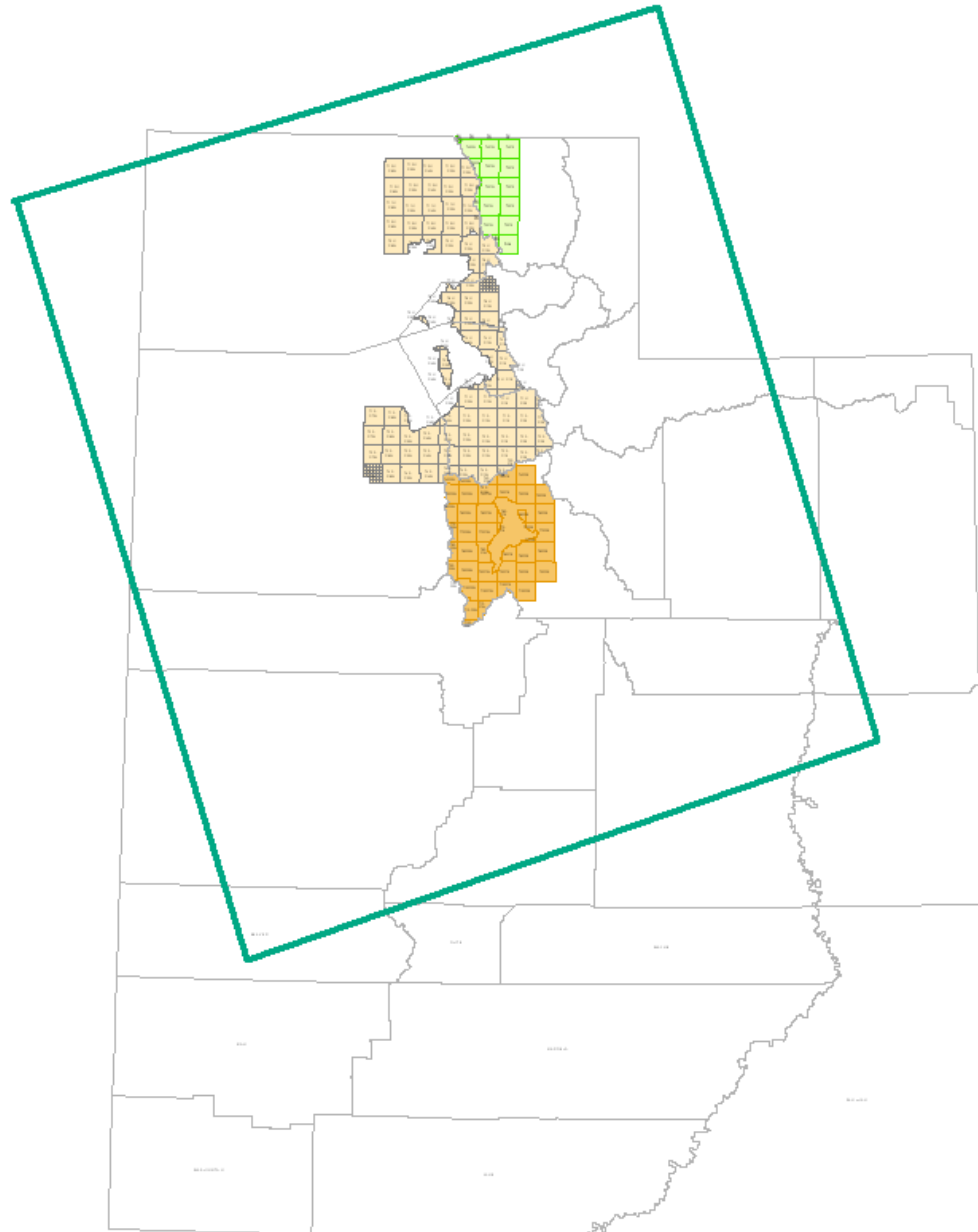
Emissions Inventories

- A database that lists, by source, the amount of air pollutants discharged into the atmosphere of a community or region during a given time period.
 - Criteria Pollutants
 - Carbon Monoxide (CO)
 - Nitrogen oxides (NO_x)
 - Particulate matter (PM₁₀, PM_{2.5})
 - Sulfur oxides (SO_x)
 - Volatile Organic Compounds (VOC)
 - Hazardous Air Pollutants

Emissions Inventories

- Scope
 - Statewide
 - modeling domain
 - Non-attainment Area
 - County
 - City
 - Source

Modeling Domain with Non-Attainment Area Boundaries



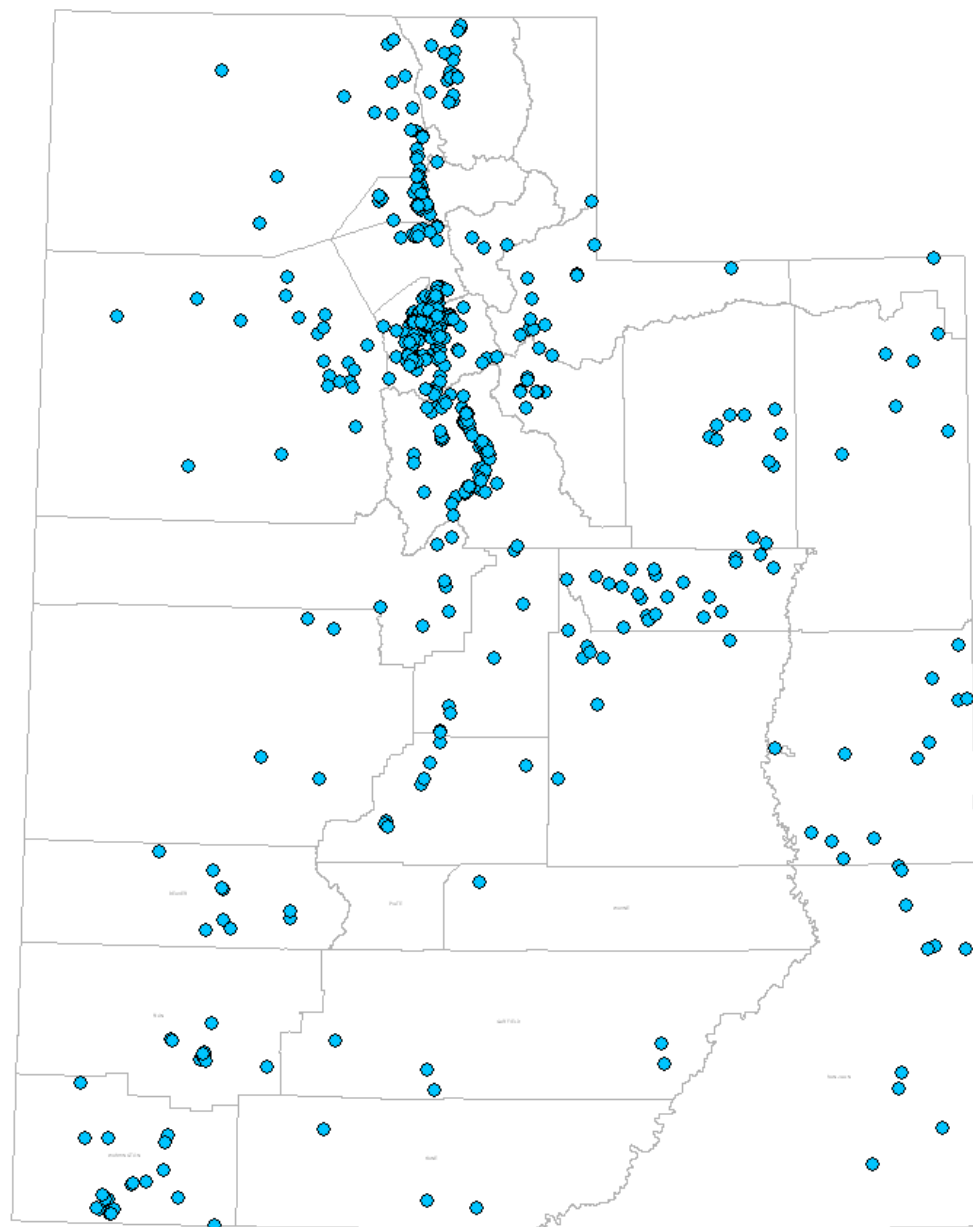
Air Emissions Sources

- Area
 - Too small to be inventoried individually (90+ categories)
 - Solvents: consumer/personal care products
 - Autobody refinishing
 - Residential/Commercial combustion (coal, oil, LPG, kerosene)
- Mobile
 - On-road
 - Highway vehicles
 - Non-road
 - Aircraft
 - Locomotives
 - Agricultural equipment
 - Misc. non-road engines (lawn/garden care equipment, snowmobiles)
- Point/Industry
 - Stationary industrial sources
 - Portable equipment (crushers, asphalt plants, etc.)

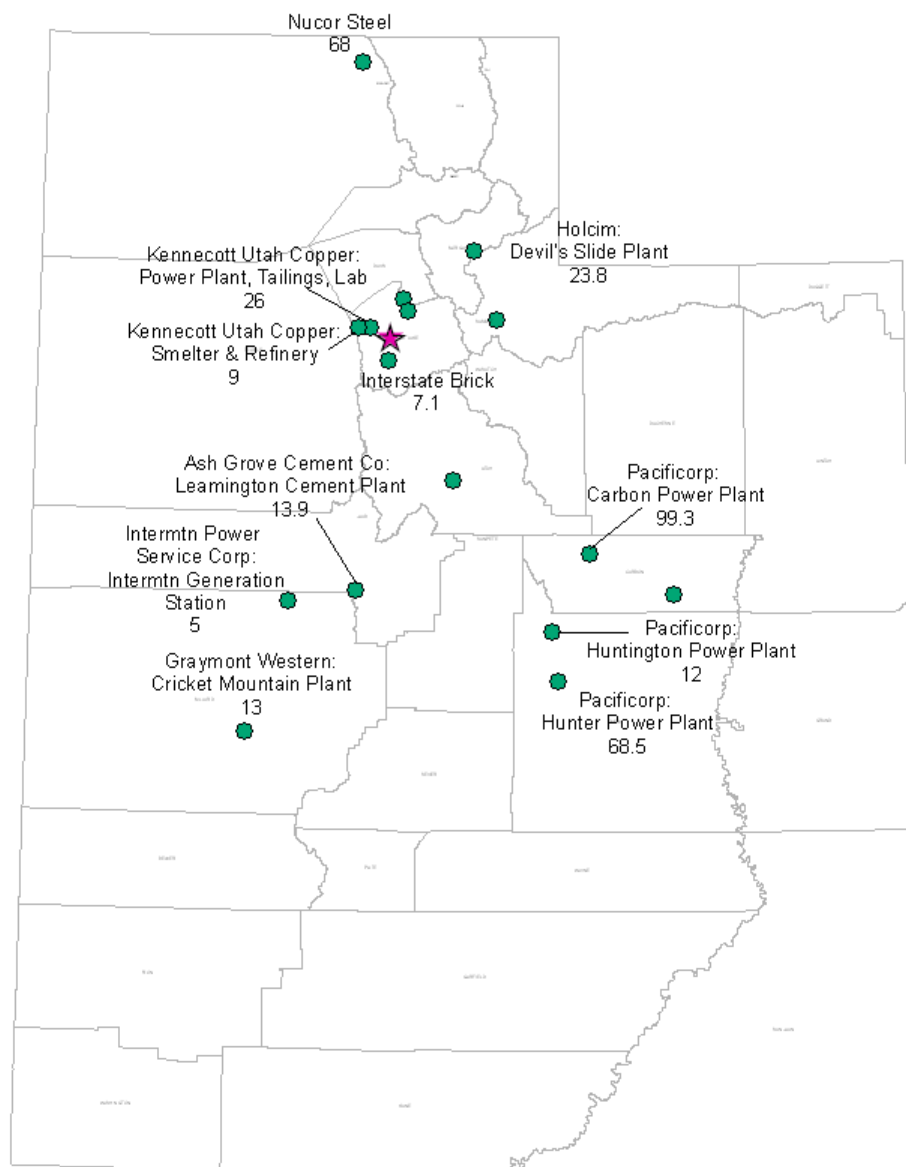
Point/Industry

- The Division of Air Quality is responsible for issuing permits for any operation that emits any contaminant into the air.
 - Permits may set limits on amount of material produced, operating times, fuel consumption, or fuel used.
 - Not all permits trigger emissions inventory submittals.

Point Source Locations 2011



Reported Mercury Emissions 2011



2011 Point Source Mercury Emissions

Site ID	CompanySite	Mercury lbs
10081	PacifiCorp: Carbon Power Plant	99.34
10237	PacifiCorp: Hunter Power Plant	68.46
10008	Nucor Steel: Nucor Steel	68.2
10572	Kennecott Utah Copper LLC: Power Plant/ Lab/ Tailings Impoundment	26
10007	Holcim (US) Inc.: Devil's Slide Plant	23.81
10303	Ash Grove Cement Company: Leamington Cement Plant	13.982
10313	Graymont Western US Incorporated: Cricket Mountain Plant	13.04
10238	PacifiCorp: Huntington Power Plant	12
10346	Kennecott Utah Copper LLC: Smelter & Refinery	9.17
10335	Tesoro West Coast: Salt Lake City Refinery	8.54
10423	Interstate Brick Company: Brick Manufacturing Plant	7.1
10327	Intermountain Power Service Corporation: Intermountain Generation Station	5
10676	Utelite Corporation: Shale Processing	4
10142	Stericycle Incorporated: BFI Medical Waste Incinerator	3.2
10790	Brigham Young University: Main Campus	1.2
10096	Sunnyside Cogeneration Associates: Sunnyside Cogeneration Facility	1.15

Federal Regulations for Airborne Mercury

- 40 CFR Part 63, Subpart UUUUU
 - National Emissions Standards for Hazardous Air Pollutants: Coal and Oil-fired Electric Utility Steam Generating Units
 - Intermountain Power Service Corp
 - PacifiCorp: Hunter
 - PacifiCorp: Huntington
 - PacifiCorp: Carbon (possible closure before implementation in 2015)

Federal Regulations for Airborne Mercury

- 40 CFR Part 63, Subpart LLL
 - National Emissions Standards for Hazardous Air Pollutants: Portland Cement Manufacturing Industry
 - Ash Grove Cement Company
 - Holcim Inc.

Toxic Release Inventory (TRI)

- TRI was established under the Federal Emergency Planning and Community Right-to-Know Act of 1986.
- A facility must report to TRI if it:
 - Falls within federally specified industrial classes such as: manufacturing, mining, or federally owned facilities;
 - Has 10 or more full-time employees; and
 - Manufactures or processes more than 25,000 pounds, or uses more than 10,000 pounds, of any of the 682 TRI-listed chemicals during the calendar year.

Toxic Release Inventory (TRI)

Facility	RCRA Subtitle C Landfills	Other On-Site Landfills	Fugitive Air Emissions	Point Source Air Emissions	Other Surface Impoundments	Other Land Disposal	Total On-site Disposal or Other Releases
ASH GROVE CEMENT- LEAMINGTON	0	0	0.00011	94.3	0	0	94.30011
BIG WEST OIL LLC	0	0	0	6.33	0	0	6.33
BONANZA POWER PLANT	0	132	0	1.822	0	0	133.822
CHEVRON PRODUCTS CO - SALT LAKE REFINERY	0	0	0.0000001	4.3	0	0	4.6000001
CLEAN HARBORS ARAGONITE LLC)	0	0	0	3	0	0	3
CLEAN HARBORS GRASSY MOUNTAIN LLC.	3,795.00	0	0.13	0	0	0	3,795.13
COVOL ENGINEERED FUELS LC - WELLINGTON PLANT	0	0	0.001	0	0	0	0.001
ENERGYSOLUTIONS LLC.	803.9	259.9	0	0	0	0	1,063.80
GRAYMONT WESTERN US INC.	0	3.6	0	10.8	0	35.2	49.6
HOLCIM (US) INC DEVIL'S SLIDE PLANT	0	1.31	0	26.77	0	0	28.08
HOLLY REFINING & MARKETING CO WOODS CROSS REFINERY	0	0	0	1.9	0	0	1.9
INTERMOUNTAIN POWER GENERATING STATION.	0	477	0.1	5.1	106.8	0	589
INTERSTATE BRICK.	0	0	0	0.6	0	0	0.6
JOHNSON MATTHEY GOLD & SILVER REFINING INC	0	0	0	0.0014	0	0	0.0014
KENNECOTT BARNEYS CANYON MINING CO	0	0	0.00018	6.06	0	0	6.06018
KENNECOTT UTAH COPPER MINE CONCENTRATORS & POWER PLANT	0	0.54	0.24	24.86	5,765.70	29,434.09	35,226.46
KENNECOTT UTAH COPPER SMELTER & REFINERY.	0	26	0.02	5.76	1,287.00	0	1,318.82
MATERIALS PACKAGING CORP.	0	0	0.0001	0.0058	0	0	0.0059
MATERION NATURAL RESOURCES INC MILL.	0	0	0	0.05	0.5	0	0.55
NUCOR STEEL	0	863.4	0.1	260.1	0	0	1,123.60
PACIFIC STATES CAST IRON PIPE CO.	0	0	0	68	0	0	68
PACIFICORP CARBON PLANT.	0	42.2	0.1	16.39	0	0	58.69
PACIFICORP ENERGY HUNTINGTON PLANT.	0	215.8	0.3	11.9	0	0	228.6
PACIFICORP HUNTER PLANT	0	142.4	0	71.4	0	0.1	213.9
POINT SOUTH READY-MIX CONCRETE.	0	0	0	0	0.545	0.408	0.953
STAKER & PARSON CALIFORNIA READY-MIX CONCRETE	0	0	0	0	0.5123	0	0.5123
STAKER & PARSON COS BECK NORTH READY MIX & ASPHALT	0	0	0	0	0.44	0	0.44
SUNNYSIDE COGENERATION ASSOCIATES	0	81.95	0.2	0.8	0	0	82.95
TESORO LOGISTICS - SALT LAKE CITY TERMINAL.	0	0	0	0	0	0	0
TESORO REFINING & MARKETING CO LLC.	0	0	0	33	0	0	33
US ARMY DESERET CHEMICAL DEPOT.	0	0	0	1	0	0	1
US MAGNESIUM LLC.	0	0	0	85.53	0	0	85.53
Total	4,598.90	2,246.10	1.1913901	739.7792	7,161.50	29,469.80	44,219.24

Toxic Release Inventory (TRI)

#	Facility	RCRA Subtitle C Landfills	Other Landfills	Solidification /Stabilization (metals only)	POTWs (Metal and Metal Compounds)	RCRA Subtitle C Surface Impoundments	Waste Broker	Total Off-site Disposal or Other Releases	Total On- and Off-site Disposal or Other Releases
	ASH GROVE CEMENT- LEAMINGTON	-	-	-	-	-	-	-	94.30011
	BIG WEST OIL LLC	-	-	3.45	0	-	-	3.45	9.78
	BONANZA POWER PLANT	-	-	-	-	-	-	-	133.822
	CHEVRON PRODUCTS CO - SALT LAKE REFINERY	8.5	3.8	0	0	0.058	-	12.358	16,958,000.1
	CLEAN HARBORS ARAGONITE LLC)	48,660.00	-	0	0	-	2,073.00	50,733.00	50,736.00
	CLEAN HARBORS GRASSY MOUNTAIN LLC.	-	-	0	0	-	-	0	3,795.13
	COVOL ENGINEERED FUELS LC - WELLINGTON PLANT	-	-	-	-	-	-	-	0.001
	ENERGYSOLUTIONS LLC.	-	-	0	0	-	-	0	1,063.80
	GRAYMONT WESTERN US INC.	-	-	-	-	-	-	-	49.6
	HOLCIM (US) INC DEVIL'S SLIDE PLANT	-	-	-	-	-	-	-	28.08
	HOLLY REFINING & MARKETING CO WOODS CROSS REFINERY	-	-	-	0	-	15	15	16.9
	INTERMOUNTAIN POWER GENERATING STATION.	-	-	0	0	-	-	0	589
	INTERSTATE BRICK.	-	-	-	-	-	-	-	0.6
	JOHNSON MATTHEY GOLD & SILVER REFINING INC	-	-	-	0.66	-	-	0.66	0.6614
	KENNECOTT BARNEYS CANYON MINING CO	-	-	-	-	-	-	-	6.06018
	KENNECOTT UTAH COPPER MINE CONCENTRATORS & POWER PLANT	-	-	0	0	-	43	43.01	35,269.47
	KENNECOTT UTAH COPPER SMELTER & REFINERY.	-	1.75	0	0	-	0.02	1.77	1,320.59
	MATERIALS PACKAGING CORP.	-	-	-	-	-	-	-	0.0059
	MATERION NATURAL RESOURCES INC MILL.	-	-	0	0	-	-	0	0.55
	NUCOR STEEL	9.5	0	0	0	-	0.1	9.6	1,133.20
	PACIFIC STATES CAST IRON PIPE CO.	-	3	0	0	-	-	3	71
	PACIFICORP CARBON PLANT.	-	-	0	0	-	-	0	58.69
	PACIFICORP ENERGY HUNTINGTON PLANT.	-	-	0	0	-	0	0	228.6
	PACIFICORP HUNTER PLANT	-	-	0	0	-	-	0	213.9
	POINT SOUTH READY-MIX CONCRETE.	-	-	-	-	-	-	-	0.953
	STAKER & PARSON CALIFORNIA READY-MIX CONCRETE	-	-	0	0	-	-	0.38	0.8923
	STAKER & PARSON COS BECK NORTH READY MIX & ASPHALT	-	-	-	-	-	-	-	0.44
	SUNNYSIDE COGENERATION ASSOCIATES	-	2.05	0	0	-	-	2.05	85
	TESORO LOGISTICS - SALT LAKE CITY TERMINAL.	0.16	-	-	0	-	0.01	0.17	0.17
	TESORO REFINING & MARKETING CO LLC.	0	0	0	0	-	0.9	0.9	33.9
	US ARMY DESERET CHEMICAL DEPOT.	-	-	1	0	-	-	1	2
	US MAGNESIUM LLC.	-	-	0	0	-	-	0	85.53
	Total	48,678.16	10.6	4.45	0.66	0.058	2,132.03	50,826.35	95,045.58